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**GARISSA UNIVERSITY**

**UNIVERSITY EXAMINATION 2018/2019 ACADEMIC YEAR TWO**

**SECOND SEMESTER EXAMINATION**

**SCHOOL OF BIOLOGICAL AND PHYSICAL SCIENCES**

**FOR THE DEGREE OF BACHELOR OF EDUCATION**

**COURSE CODE: COM 410**

**COURSE TITLE: USER INTERFACE DESIGN**

**EXAMINATION DURATION: 2 HOURS**

**DATE: 07/02/2020 TIME: 2.00-4.00 PM**

**INSTRUCTION TO CANDIDATES**

* **The examination has FIVE (5) questions**
* **Question ONE (1) is COMPULSORY**
* **Choose any other TWO (2) questions from the remaining FOUR (4) questions**
* **Use sketch diagrams to illustrate your answer whenever necessary**
* **Do not carry mobile phones or any other written materials in examination room**
* **Do not write on this paper**

**This paper consists of THREE (3) printed pages *please turn over***

**QUESTION ONE (COMPULSORY)**

1. Differentiate between Software Engineering and UID **[4 marks]**
2. Compare graphical user interfaces with command line interfaces. **[4 Marks]**
3. Define Ergonomics and its roles in human computer interaction **[6 marks]**
4. UID is a multidisciplinary field that draws expertise from a number of different areas of study. Explain three such areas and their contributions with UID **[6 marks]**
5. Explain any four facilities included in an interactive system that offers users support in ease of use of a system  **[6 marks]**
6. Norman describes the two gulfs which represent the problems that are caused by some interfaces to their users. Explain them **[4 marks]**

**QUESTION TWO**

You have been asked to help in the development of a new computerised call centre. Customers from a national Bank will ring up if they wish to change the details of their account. For instance, they might want to open a new account, close an old account, they might want to change the address of the person who owns the account and so on.

1. Explain how prototype can be applied as a requirements elicitation techniques. Identify the strenghts and weaknesses of this technique. **[5 marks]**
2. Explain five principles you will consider to design an usability product **[5 marks]**
3. Differentiate between user requirements modelling and cognitive modelling and ways the models contribute to the design process **[5 marks]**
4. Identify the various stakeholders in this scenario **[5 marks]**

**QUESTION THREE**

Before the release of the product to the general public, Apple designers would like to evaluate the design of their new watch as extensively as they can. They are considering many forms of user and expert evaluation.

1. Explain three goals of product evaluation **[6 marks]**
2. Differentiate between formative and summative evaluation in this scenario **[4 marks]**
3. Explain a user-evaluation method that Apple designers can adopt and the major steps they will follow. **[6 marks]**
4. What are the challenges that may be faced when a evaluating user interface **[4 marks]**

**QUESTION FOUR**

Task analysis breaks users activities into a series of goals and sub-goals. In order to print a document, you must first select the ‘print’ command. You must then select the printer, the number of copies and so on.

1. Explain the benefits that task analysis can offer to the design of interactive computer systems. **[6 marks]**
2. Interacting Cognitive Subsystems (ICS) provides a detailed model of human cognition which can be used to determine how much cognitive effort a user will have to employ to complete a task. How does this differ to GOMS in terms of its model of human cognition, the intended users of the model, and the kinds of assessments it can make **[6 marks]**
3. User centered requirements analysis increases the effort of developing systems. what benefits can such approaches bring and how would you convince the company you work for to adopt user centered approaches **[8 marks]**

**QUESTION FIVE**

In “Past, Present, and Future of User Interface Software Tools,” Myers et al. chart the early 3 research on concepts, tools, and techniques for developing user interfaces that have shaped and informed the design of today’s interfaces, discussing their promise and use as well as the challenges in their adoption by designers and developers.

1. Explain the steps in Normans execution model and their implications for designing user interfaces. **[5 marks]**
2. Explain five requirements in designing an effective user support facilities **[5 marks]**
3. Describe the concept of model-based techniques and discuss the challenges experienced in early explorations of their use. **[5 marks]**
4. Explain the concept of Computer Support of Collaborative Work (CSCW), provide examples of tools and applications in today’s interfaces, and discuss the considerations for and challenges in integrating them into user interfaces. **[5 marks]**